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**SUBELEMENT 3AG—Practical Circuits
(1 Exam Question)**

3AG-1-1.1 Which frequencies are attenuated by a low-pass filter?

- pg 5+8*
- A. Those above its cut-off frequency
 - B. Those within its cut-off frequency
 - C. Those within 50 kHz on either side of its cut-off frequency
 - D. Those below its cut-off frequency

3AG-1-1.2 What circuit passes electrical energy below a certain frequency and blocks electrical energy above that frequency?

- pg 5+8*
- A. A band-pass filter
 - B. A high-pass filter
 - C. An input filter
 - D. A low-pass filter

3AG-1-2.1 Why does virtually every modern transmitter have a built-in low-pass filter connected to its output?

- A. To attenuate frequencies below its cutoff point
- B. To attenuate low frequency interference to other amateurs
- C. To attenuate excess harmonic radiation
- D. To attenuate excess fundamental radiation

3AG-1-2.2 You believe that excess harmonic radiation from your transmitter is causing interference to your television receiver. What is one possible solution for this problem?

- pg 10*
- A. Install a low-pass filter on the television receiver
 - B. Install a low-pass filter at the transmitter output
 - C. Install a high-pass filter on the transmitter output
 - D. Install a band-pass filter on the television receiver

3AG-2-1.1 What circuit passes electrical energy above a certain frequency and attenuates electrical energy below that frequency?

- pg 5+8*
- A. A band-pass filter
 - B. A high-pass filter
 - C. An input filter
 - D. A low-pass filter

3AG-2-2.1 Where is the proper place to install a high-pass filter?

- pg 10*
- A. At the antenna terminals of a television receiver
 - B. Between a transmitter and a Transmatch
 - C. Between a Transmatch and the transmission line
 - D. On a transmitting antenna

3AG-2-2.2 Your Amateur Radio transmissions cause interference to your television receiver even though you have installed a low-pass filter at the transmitter output. What is one possible solution for this problem?

- pg 10*
- A. Install a high-pass filter at the transmitter terminals
 - B. Install a high-pass filter at the television antenna terminals
 - C. Install a low-pass filter at the television antenna terminals also
 - D. Install a band-pass filter at the television antenna terminals

3AG-3-1.1

What circuit attenuates electrical energy above a certain frequency and below a lower frequency?

pg 5+8

3AG-3-1.2

What general range of RF energy does a band-pass filter reject?

- A. All frequencies above a specified frequency
- B. All frequencies below a specified frequency
- C. All frequencies above the upper limit of the band in question
- D. All frequencies above a specified frequency and below a lower specified frequency

3AG-3-2.1

The IF stage of a communications receiver uses a filter with a peak response at the intermediate frequency. What term describes this filter response?

- A. A band-pass filter
- B. A high-pass filter
- C. An input filter
- D. A low-pass filter

3AG-4-1.1

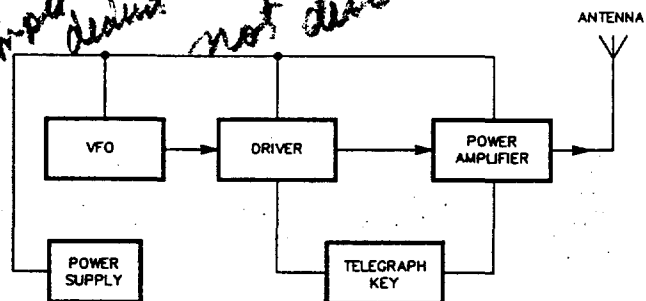
What circuit is likely to be found in all types of receivers?

- A. An audio filter
- B. A beat frequency oscillator
- C. A detector
- D. An RF amplifier

3AG-4-1.2

What type of transmitter does this block diagram represent?

Simple circuit not discussed

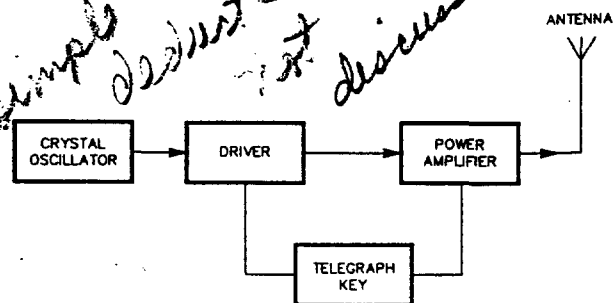


- A. A simple packet-radio transmitter
- B. A simple crystal-controlled transmitter
- C. A single-sideband transmitter
- D. A VFO-controlled transmitter

3AG-4-1.3

What type of transmitter does this block diagram represent?

Simple circuit not discussed



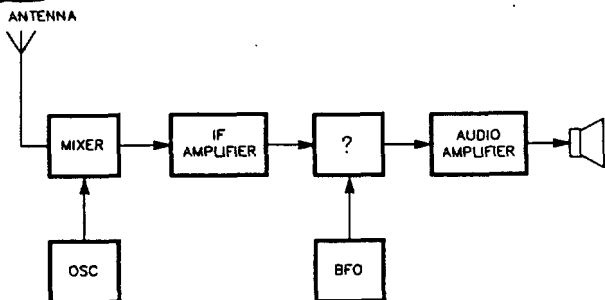
- A. A simple packet-radio transmitter
- B. A simple crystal-controlled transmitter
- C. A single-sideband transmitter
- D. A VFO-controlled transmitter

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3AG-4-1.4

What is the unlabeled block (?) in this diagram?

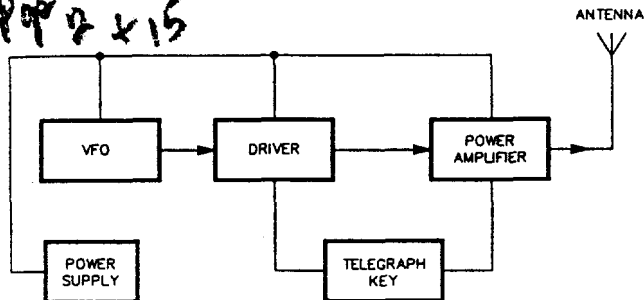


- A. An AGC circuit
- B. A detector
- C. A power supply
- D. A VFO circuit

3AG-4-1.5

What type of device does this block diagram represent?

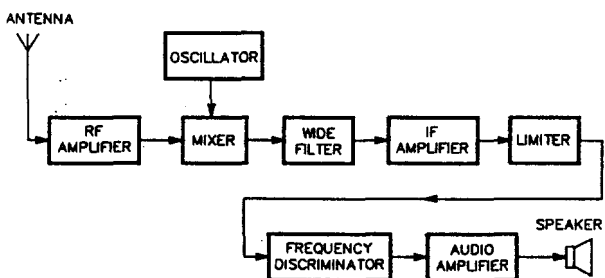
pg 2 x 15



- A. A double-conversion receiver
- B. A variable-frequency oscillator
- C. A simple superheterodyne receiver
- D. A simple CW transmitter

3AG-4-2.1

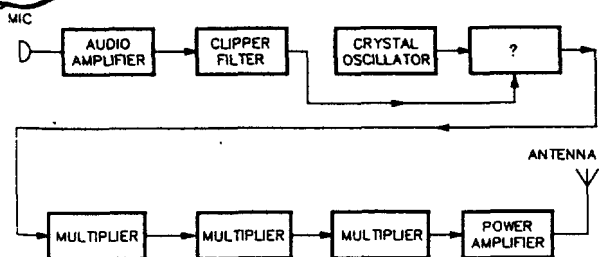
What type of device does this block diagram represent?



- A. A double-conversion receiver
- B. A variable-frequency oscillator
- C. A simple superheterodyne receiver
- D. A simple FM receiver

3AG-4-2.2

What is the unlabeled block (?) in this diagram?



- A. A band-pass filter
- B. A crystal oscillator
- C. A reactance modulator
- D. A rectifier modulator

SUBELEMENT 3AH—Signals and Emissions (2 Exam Questions)

3AH-1.1

What is the meaning of the term *modulation*?

- A. The process of varying some characteristic of a carrier wave for the purpose of conveying information
- B. The process of recovering audio information from a received signal
- C. The process of increasing the average power of a single-sideband transmission
- D. The process of suppressing the carrier in a single-sideband transmitter

3AH-2-1.1

If the modulator circuit of your FM transmitter fails, what emission type would likely result?

pg 2
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- A. An unmodulated carrier wave
- B. A phase modulated carrier wave
- C. An amplitude modulated carrier wave
- D. A frequency modulated carrier wave

3AH-2-1.2

What emission does not have sidebands resulting from modulation?

- A. AM phone
- B. Test
- C. FM phone
- D. RTTY

3AH-2-2.1

What is the FCC emission designator for a Morse code telegraphy signal produced by switching the transmitter output on and off?

pg 3

- A. Test
- B. AM phone
- C. CW
- D. RTTY

3AH-2-2.2

What is CW?

pg 3

- A. Morse code telegraphy using amplitude modulation
- B. Morse code telegraphy using frequency modulation
- C. Morse code telegraphy using phase modulation
- D. Morse code telegraphy using pulse modulation

3AH-2-3.1

What is RTTY?

- A. Amplitude-keyed telegraphy
- B. Frequency-shift-keyed telegraphy
- C. Frequency-modulated telephony
- D. Phase-modulated telephony

3AH-2-3.2

What is the emission designation for telegraphy by frequency shift keying without the use of a modulating tone?

- A. RTTY
- B. MCW
- C. CW
- D. Single-sideband phone

3AH-2-4.1

What emission type results when an on/off keyed audio tone is applied to the microphone input of an FM transmitter?

- A. RTTY
- B. MCW
- C. CW
- D. Single-sideband phone

3AH-2-4.2

What is tone-modulated international Morse code telegraphy?

- A. Telephony produced by audio fed into an FM transmitter
- B. Telegraphy produced by an on/off keyed audio tone fed into a CW transmitter
- C. Telegraphy produced by on/off keying of the carrier amplitude
- D. Telegraphy produced by an on/off keyed audio tone fed into an FM transmitter

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3AH-2-5.1

- What is the emission designated as "MCW"?
- A. Frequency-modulated telegraphy using audio tones
 - B. Frequency-modulated telephony
 - C. Frequency-modulated facsimile using audio tones
 - D. Phase-modulated television

3AH-2-5.2

- In an ITU emission designator like A1A, what does the first symbol describe?
- A. The nature of the signal modulating the main carrier
 - B. The type of modulation of the main carrier
 - C. The speed of a radiotelegraph transmission
 - D. The type of the information to be transmitted

3AH-2-5.3

- What emission type results when an on-off keyed audio oscillator is connected to the microphone jack of an FM phone transmitter?
- A. SS
 - B. RTTY
 - C. MCW
 - D. Image

3AH-2-6.1

- In an ITU emission designator like F3B, what does the second symbol describe?
- A. The nature of the signal modulating the main carrier
 - B. The type of modulation of the main carrier
 - C. The type of information to be transmitted
 - D. The frequency modulation index of a carrier

3AH-2-6.2

- How would you transmit packet using an FM 2-meter transceiver?
- A. Use your telegraph key to interrupt the carrier wave
 - B. Modulate your FM transmitter with audio tones from a terminal node controller
 - C. Use your mike for telephony
 - D. Use your touch-tone (DTMF) key pad to signal in Morse code.

3AH-2-7.1

- What type of emission results when speaking into the microphone of a 2-meter FM hand-held transceiver?
- A. Amplitude modulated phone
 - B. Code telegraphy
 - C. An unmodulated carrier wave
 - D. Frequency modulated phone

3AH-2-7.2

- What emission type do most 2-meter FM transmitters transmit?
- A. Interrupted pure carrier wave
 - B. Frequency modulated phone
 - C. Single-sideband voice emissions
 - D. Amplitude modulated carrier waves

3AH-2-8.1

- What is the most important consideration when installing a 10-meter dipole inside an attic?
- A. It will exhibit a low angle of radiation
 - B. The dipole must always be run horizontally polarized
 - C. It will be covered by an insulation to prevent fire and high enough to prevent being accidentally touched during transmission
 - D. Dipoles usually don't work in attics

3AH-2-8.2

- Which type of transmitter will produce a frequency modulated carrier wave?
- A. A CW transmitter
 - B. An amplitude modulated transmitter
 - C. A single-sideband transmitter
 - D. A phase modulated transmitter

3AH-3.1

- What is the term used to describe a constant-amplitude radio-frequency signal?
- A. An RF carrier
 - B. An AF carrier
 - C. A sideband carrier
 - D. A subcarrier

3AH-3.2

- What is another name for an unmodulated radio-frequency signal?
- A. An AF carrier
 - B. An RF carrier
 - C. A sideband carrier
 - D. A subcarrier

3AH-4.1

- What characteristic makes FM telephony especially well-suited for local VHF/UHF radio communications?
- A. Good audio fidelity and intelligibility under weak-signal conditions
 - B. Better rejection of multipath distortion than the AM modes
 - C. Good audio fidelity and high signal-to-noise ratio above a certain signal amplitude threshold
 - D. Better carrier frequency stability than the AM modes

3AH-5.1

- What emission is produced by a transmitter using a reactance modulator?
- A. CW
 - B. Unmodulated carrier
 - C. Single-sideband, suppressed-carrier phone
 - D. Phase modulated phone

3AH-5.2

- What other emission does phase modulation most resemble?
- A. Amplitude modulation
 - B. Pulse modulation
 - C. Frequency modulation
 - D. Single-sideband modulation

3AH-6.1

- Many communications receivers have several IF filters that can be selected by the operator. Why do these filters have different bandwidths?
- A. Because some ham bands are wider than others
 - B. Because different bandwidths help increase the receiver sensitivity
 - C. Because different bandwidths improve S-meter readings
 - D. Because some emission types occupy a wider frequency range than others

3AH-6.2

- List the following signals in order of increasing bandwidth (narrowest signal first): CW, FM voice, RTTY, SSB voice.
- A. RTTY, CW, SSB voice, FM voice
 - B. CW, FM voice, RTTY, SSB voice
 - C. CW, RTTY, SSB voice, FM voice
 - D. CW, SSB voice, RTTY, FM voice

*There is a problem with the answer (C) to question 3AH-2-8.1, as released by the VEC Question Pool Committee. The most important consideration is that an indoor antenna should be treated with respect because of the possibility of adverse biological effects due to near-field radiation. Another point to keep in mind is that insulated wire does *not* reduce or eliminate the risk of RF burns. Finally, a dipole does not pose a fire hazard from RF, whether it uses insulated or uninsulated wire.

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3AH-7-1.1

To what is the deviation of an FM transmission proportional?

- A. Only the frequency of the audio modulating signal
- B. The frequency and the amplitude of the audio modulating signal
- C. The duty cycle of the audio modulating signal
- D. Only the amplitude of the audio modulating signal

3AH-7-2.1

What is the result of overdeviation in an FM transmitter?

- A. Increased transmitter power consumption
- B. Out-of-channel emissions (splatter)
- C. Increased transmitter range
- D. Inadequate carrier suppression

3AH-7-2.2

What is *splatter*?

- A. Interference to adjacent signals caused by excessive transmitter keying speeds
- B. Interference to adjacent signals caused by improper transmitter neutralization
- C. Interference to adjacent signals caused by overmodulation of a transmitter
- D. Interference to adjacent signals caused by parasitic oscillations at the antenna

SUBELEMENT 3AI—Antennas and Feed Lines (3 Exam Questions)

3AI-1-1.1

What antenna type best strengthens signals from a particular direction while attenuating those from other directions?

- A. A beam antenna
- B. An isotropic antenna
- C. A monopole antenna
- D. A vertical antenna

3AI-1-1.2

What is a *directional antenna*?

- A. An antenna whose parasitic elements are all constructed to be directors
- B. An antenna that radiates in direct line-of-sight propagation, but not skywave or skip propagation
- C. An antenna permanently mounted so as to radiate in only one direction
- D. An antenna that radiates more strongly in some directions than others

3AI-1-1.3

What is a *Yagi* antenna?

- A. Half-wavelength elements stacked vertically and excited in phase
- B. Quarter-wavelength elements arranged horizontally and excited out of phase
- C. Half-wavelength linear driven element(s) with parasitically excited parallel linear elements
- D. Quarter-wavelength, triangular loop elements

3AI-1-1.4

What is the general configuration of the radiating elements of a horizontally polarized Yagi?

- A. Two or more straight, parallel elements arranged in the same horizontal plane
- B. Vertically stacked square or circular loops arranged in parallel horizontal planes
- C. Two or more wire loops arranged in parallel vertical planes
- D. A vertical radiator arranged in the center of an effective RF ground plane

3AI-1-1.5

What type of parasitic beam antenna uses two or more straight metal-tubing elements arranged physically parallel to each other?

- A. A delta loop antenna
- B. A quad antenna
- C. A Yagi antenna
- D. A Zepp antenna

3AI-1-1.6

How many directly driven elements does a Yagi antenna have?

- A. None; they are all parasitic
- B. One
- C. Two
- D. All elements are directly driven

3AI-1-1.7

What is a *parasitic beam antenna*?

- A. An antenna where the director and reflector elements receive their RF excitation by induction or radiation from the driven element
- B. An antenna where wave traps are used to assure magnetic coupling among the elements
- C. An antenna where all elements are driven by direct connection to the feed line
- D. An antenna where the driven element receives its RF excitation by induction or radiation from the directors

3AI-1-2.1

What is a *cubical quad antenna*?

- A. Four parallel metal tubes, each approximately 1/2 electrical wavelength long
- B. Two or more parallel four-sided wire loops, each approximately one electrical wavelength long
- C. A vertical conductor 1/4 electrical wavelength high, fed at the bottom
- D. A center-fed wire 1/2 electrical wavelength long

3AI-1-2.2

What kind of antenna array is composed of a square full-wave closed loop driven element with parallel parasitic element(s)?

- A. Delta loop
- B. Cubical quad
- C. Dual rhombic
- D. Stacked Yagi

3AI-1-2.3

Approximately how long is one side of the driven element of a cubical quad antenna?

- A. 2 electrical wavelengths
- B. 1 electrical wavelength
- C. 1/2 electrical wavelength
- D. 1/4 electrical wavelength

3AI-1-2.4

Approximately how long is the wire in the driven element of a cubical quad antenna?

- A. 1/4 electrical wavelength
- B. 1/2 electrical wavelength
- C. 1 electrical wavelength
- D. 2 electrical wavelengths

3AI-1-3.1

What is a *delta loop antenna*?

- A. A variation of the cubical quad antenna, with triangular elements
- B. A large copper ring, used in direction finding
- C. An antenna system composed of three vertical antennas, arranged in a triangular shape
- D. An antenna made from several coils of wire on an insulating form

3AI-2-1.1

To what does the term *horizontal* as applied to wave polarization refer?

- A. The magnetic lines of force in the radio wave are parallel to the earth's surface
- B. The electric lines of force in the radio wave are parallel to the earth's surface
- C. The electric lines of force in the radio wave are perpendicular to the earth's surface
- D. The radio wave will leave the antenna and radiate horizontally to the destination

3AI-2-1.2

What electromagnetic wave polarization does a cubical quad antenna have when the feed point is in the center of a horizontal side?

- A. Circular
- B. Helical
- C. Horizontal
- D. Vertical

3AI-2-1.3

What electromagnetic wave polarization does a cubical quad antenna have when all sides are at 45 degrees to the earth's surface and the feed point is at the bottom corner?

- A. Circular
- B. Helical
- C. Horizontal
- D. Vertical

3AI-2-2.1

What is the polarization of electromagnetic waves radiated from a half-wavelength antenna perpendicular to the earth's surface?

- A. Circularly polarized waves
- B. Horizontally polarized waves
- C. Parabolically polarized waves
- D. Vertically polarized waves

3AI-2-2.2

What is the electromagnetic wave polarization of most man-made electrical noise radiation in the HF-VHF spectrum?

- A. Horizontal
- B. Left-hand circular
- C. Right-hand circular
- D. Vertical

3AI-2-2.3

To what does the term *vertical* as applied to wave polarization refer?

- A. The electric lines of force in the radio wave are parallel to the earth's surface
- B. The magnetic lines of force in the radio wave are perpendicular to the earth's surface
- C. The electric lines of force in the radio wave are perpendicular to the earth's surface
- D. The radio wave will leave the antenna and radiate vertically into the ionosphere

3AI-2-2.4

What electromagnetic wave polarization does a cubical quad antenna have when the feed point is in the center of a vertical side?

- A. Circular
- B. Helical
- C. Horizontal
- D. Vertical

3AI-2-2.5

What electromagnetic wave polarization does a cubical quad antenna have when all sides are at 45 degrees to the earth's surface and the feed point is at a side corner?

- A. Circular
- B. Helical
- C. Horizontal
- D. Vertical

3AI-3-1.1

What is meant by the term *standing wave ratio*?

- A. The ratio of maximum to minimum inductances on a feed line
- B. The ratio of maximum to minimum resistances on a feed line
- C. The ratio of maximum to minimum impedances on a feed line
- D. The ratio of maximum to minimum voltages on a feed line

3AI-3-1.2

What is *standing wave ratio* a measure of?

- A. The ratio of maximum to minimum voltage on a feed line
- B. The ratio of maximum to minimum reactance on a feed line
- C. The ratio of maximum to minimum resistance on a feed line
- D. The ratio of maximum to minimum sidebands on a feed line

3AI-3-2.1

What is meant by the term *forward power*?

- A. The power traveling from the transmitter to the antenna
- B. The power radiated from the front of a directional antenna
- C. The power produced during the positive half of the RF cycle
- D. The power used to drive a linear amplifier

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3AI-3-2.2

What is meant by the term *reflected power*?

- A. The power radiated from the back of a directional antenna
- B. The power returned to the transmitter from the antenna
- C. The power produced during the negative half of the RF cycle
- D. Power reflected to the transmitter site by buildings and trees

3AI-3-3.1

What happens to the power loss in an unbalanced feed line as the standing wave ratio increases?

- A. It is unpredictable
- B. It becomes nonexistent
- C. It decreases
- D. It increases

3AI-3-3.2

What type of feed line is best suited to operating at a high standing wave ratio?

- A. Coaxial cable
- B. Flat ribbon "twin lead"
- C. Parallel open-wire line
- D. Twisted pair

3AI-3-3.3

What happens to RF energy not delivered to the antenna by a lossy coaxial cable?

- A. It is radiated by the feed line
- B. It is returned to the transmitter's chassis ground
- C. Some of it is dissipated as heat in the conductors and dielectric
- D. It is canceled because of the voltage ratio of forward power to reflected power in the feed line

3AI-4-1.1

What is a *balanced line*?

- A. Feed line with one conductor connected to ground
- B. Feed line with both conductors connected to ground to balance out harmonics
- C. Feed line with the outer conductor connected to ground at even intervals
- D. Feed line with neither conductor connected to ground

3AI-4-1.2

What is an *unbalanced line*?

- A. Feed line with neither conductor connected to ground
- B. Feed line with both conductors connected to ground to suppress harmonics
- C. Feed line with one conductor connected to ground
- D. Feed line with the outer conductor connected to ground at uneven intervals

3AI-4-2.1

What is a *balanced antenna*?

- A. A symmetrical antenna with one side of the feed point connected to ground
- B. An antenna (or a driven element in an array) that is symmetrical about the feed point
- C. A symmetrical antenna with both sides of the feed point connected to ground, to balance out harmonics
- D. An antenna designed to be mounted in the center

3AI-4-2.2

What is an *unbalanced antenna*?

- A. An antenna (or a driven element in an array) that is not symmetrical about the feed point
- B. A symmetrical antenna, having neither half connected to ground
- C. An antenna (or a driven element in an array) that is symmetrical about the feed point
- D. A symmetrical antenna with both halves coupled to ground at uneven intervals

3AI-4-3.1

What device can be installed on a balanced antenna so that it can be fed through a coaxial cable?

- A. A balun
- B. A loading coil
- C. A triaxial transformer
- D. A wavetrap

3AI-4-3.2

What is a *balun*?

- A. A device that can be used to convert an antenna designed to be fed at the center so that it may be fed at one end
- B. A device that may be installed on a balanced antenna so that it may be fed with unbalanced feed line
- C. A device that can be installed on an antenna to produce horizontally polarized or vertically polarized waves
- D. A device used to allow an antenna to operate on more than one band

3AI-5-1.1

List the following types of feed line in order of increasing attenuation per 100 feet of line (list the line with the lowest attenuation first): RG-8, RG-58, RG-174 and open-wire line.

- A. RG-174, RG-58, RG-8, open-wire line
- B. RG-8, open-wire line, RG-58, RG-174
- C. open-wire line, RG-8, RG-58, RG-174
- D. open-wire line, RG-174, RG-58, RG-8

3AI-5-1.2

You have installed a tower 150 feet from your radio shack, and have a 6-meter Yagi antenna on top. Which of the following feed lines should you choose to feed this antenna: RG-8, RG-58, RG-59 or RG-174?

- A. RG-8
- B. RG-58
- C. RG-59
- D. RG-174

3AI-5-2.1

You have a 200-foot coil of RG-58 coaxial cable attached to your antenna, but the antenna is only 50 feet from your radio. To minimize feed-line loss, what should you do with the excess cable?

- A. Cut off the excess cable to an even number of wavelengths long
- B. Cut off the excess cable to an odd number of wavelengths long
- C. Cut off the excess cable
- D. Roll the excess cable into a coil a tenth of a wavelength in diameter

3AI-5-2.2

How does feed-line length affect signal loss?

- A. The length has no effect on signal loss
- B. As length increases, signal loss increases
- C. As length decreases, signal loss increases
- D. The length is inversely proportional to signal loss

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3AI-5-3.1

What is the general relationship between frequencies passing through a feed line and the losses in the feed line?

- A. Loss is independent of frequency
- B. Loss increases with increasing frequency
- C. Loss decreases with increasing frequency
- D. There is no predictable relationship

3AI-5-3.2

As the operating frequency decreases, what happens to conductor losses in a feed line?

- A. The losses decrease
- B. The losses increase
- C. The losses remain the same
- D. The losses become infinite

3AI-5-3.3

As the operating frequency increases, what happens to conductor losses in a feed line?

- A. The losses decrease
- B. The losses increase
- C. The losses remain the same
- D. The losses decrease to zero

3AI-6-1.1

You are using open-wire feed line in your amateur station. Why should you ensure that no one can come in contact with the feed line while you are transmitting?

- A. Because contact with the feed line while transmitting will cause a short circuit, probably damaging your transmitter
- B. Because the wire is so small they may break it
- C. Because contact with the feed line while transmitting will cause parasitic radiation
- D. Because high RF voltages can be present on open-wire feed line

3AI-6-2.1

How can you minimize exposure to radio frequency energy from your transmitting antennas?

- A. Use vertical polarization
- B. Use horizontal polarization
- C. Mount the antennas where no one can come near them
- D. Mount the antenna close to the ground

Common Sense

*Pg 4+9
Q25*

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ELEMENT 3A ANSWER KEY

SUBELEMENT 3AA

Numbers in this section
refer to pages in *Now
You're Talking!*

3AA-1.1	A	2-19
3AA-1.2	B	2-19
3AA-2.1		(withdrawn)
3AA-2.2	C	2-20
3AA-2.3	B	2-20
3AA-2.4	A	2-20
3AA-2.5	B	2-20
3AA-3.1	A	2-20
3AA-3.2	A	2-20
3AA-3.3	A	2-20
3AA-4.1	B	2-19
3AA-4.2	A	2-20
3AA-4.3	A	2-25
3AA-5.1	D	2-21
3AA-5.2	C	2-21
3AA-6-1.1	C	2-20
3AA-6-1.2	D	2-20
3AA-6-2.1	C	2-20
3AA-6-3.1	D	2-20
3AA-6-4.1	B	2-20
3AA-7-1.1	C	2-20
3AA-7-1.2	B	2-20
3AA-7-1.3	D	2-20
3AA-7-2.1	C	2-20
3AA-7-2.2	C	2-20
3AA-7-3.1	A	2-20
3AA-7-3.2	D	2-20
3AA-7-3.3	D	2-20
3AA-8-1.1	B	2-24
3AA-8-2.1	B	2-24
3AA-8-3.1	C	2-24
3AA-9-1.1	A	2-22
3AA-9-2.1	A	2-22
3AA-10.1	A	2-22
3AA-10.2	C	2-22
3AA-10.3	D	2-22
3AA-10.4	B	2-22
3AA-11-1.1	A	2-21
3AA-11-1.2	B	2-21
3AA-11-1.3	A	2-21
3AA-11-2.1	D	2-21
3AA-11-2.2	A	2-21
3AA-11-2.3	C	2-21
3AA-11-2.4	A	2-21
3AA-12.1	A	2-23
3AA-12.2	C	2-24
3AA-12.3	B	2-24
3AA-12.4	D	2-24
3AA-12.5	C	2-24
3AA-13.1	B	2-22
3AA-13.2	D	2-22

3AA-13.3	D	2-22
3AA-13.4	C	2-22
3AA-14.1	D	2-23
3AA-14.2	C	2-23
3AA-14.3	D	2-24
3AA-15.1	A	2-24
3AA-15.2	C	2-24
3AA-15.3	D	2-24
3AA-15.4	B	2-24
3AA-16.1	B	2-24
3AA-16.2	D	2-24
3AA-16.3	C	2-24
3AA-17.1	A	2-21

SUBELEMENT 3AB

3AB-1.1	A	9-14
3AB-1.2	C	9-14
3AB-1.3	D	9-14
3AB-2-1.1	B	9-19
3AB-2-1.2	C	9-19
3AB-2-1.3	A	9-19
3AB-2-1.4	D	9-19
3AB-2-1.5	B	9-18
3AB-2-1.6	B	9-19
3AB-2-1.7	D	9-19
3AB-2-2.1	C	9-19
3AB-2-2.2	C	2-24
3AB-2-3.1	D	9-18
3AB-2-3.2	B	9-18
3AB-2-3.3	A	9-18
3AB-2-3.4	C	9-18
3AB-2-4.1	D	2-21
3AB-3.1	A	2-24
3AB-3.2	B	9-12
3AB-3.3	C	9-9
3AB-4.1	A	2-21
3AB-4.2	D	2-21
3AB-5-1.1	C	2-22
3AB-5-1.2	B	2-22
3AB-5-2.1	D	2-22
3AB-6-1.1	A	2-22
3AB-6-1.2	B	2-22
3AB-6-2.1	D	2-22
3AB-6-3.1	B	2-22
3AB-6-3.2	C	2-22

SUBELEMENT 3AC

3AC-1-1.1	A	9-3
3AC-1-1.2	D	9-3
3AC-1-1.3	C	9-41
3AC-1-2.1	A	9-41
3AC-1-2.2	B	9-41
3AC-1-3.1	B	9-41
3AC-1-4.1	D	9-42

3AC-1-4.2	B	9-42
3AC-1-4.3	C	9-42
3AC-2.1	D	9-41
3AC-2.2	B	9-41
3AC-2.3	A	9-41
3AC-2.4	B	9-41
3AC-3.1	D	9-42
3AC-3.2	C	9-42
3AC-3.3	A	9-42
3AC-3.4	B	9-42
3AC-4.1	D	9-44
3AC-4.2	C	9-44
3AC-4.3	A	9-44
3AC-5.1	C	9-45
3AC-5.2	C	9-45
3AC-6.1	A	9-46
3AC-6.2	B	9-46
3AC-7.1	C	9-46
3AC-7.2	A	9-46
3AC-7.3	D	9-46
3AC-7.4	A	9-46
3AC-7.5	B	9-46
3AC-7.6	D	9-46

SUBELEMENT 3AD

3AD-1-1.1	C	8-13
3AD-1-1.2	D	8-13
3AD-1-1.3	B	8-13
3AD-1-1.4	B	8-13
3AD-1-2.1	A	8-14
3AD-1-2.2	A	8-14
3AD-1-2.3	A	8-14
3AD-1-3.1	C	8-14
3AD-2-1.1	B	8-15
3AD-2-2.1	C	8-15
3AD-3-1.1	A	8-15
3AD-3-2.1	D	8-15
3AD-4.1	D	8-16
3AD-5-1.1	A	8-16
3AD-5-1.2	C	8-16
3AD-5-1.3	B	8-16
3AD-5-1.4	A	8-16
3AD-5-2.1	B	8-16
3AD-5-2.2	C	8-16
3AD-6.1	A	8-17
3AD-6.2	D	8-17
3AD-6.3	A	8-17
3AD-7.1	C	8-17
3AD-7.2	B	8-17
3AD-8-1.1	D	8-17
3AD-8-1.2	D	8-17
3AD-8-2.1	A	8-17
3AD-8-2.2	C	8-17
3AD-9.1	D	8-18

3AD-9.2 B 8-18
 3AD-9.3 C 8-18
 3AD-9.4 B 8-18
 3AD-9.5 A 8-18
 3AD-9.6 A 8-18
 3AD-10.1 C 8-18
 3AD-10.2 A 8-18
 3AD-11-1.1 B 8-18
 3AD-11-1.2 A 8-18
 3AD-11-2.1 D 8-19
 3AD-11-2.2 B 8-19
 3AD-11-2.3 B 8-19
 3AD-11-2.4 D 8-19
 3AD-11-2.5 B 8-19
 3AD-11-3.1 C 8-19

SUBELEMENT 3AE

3AE-1-1.1 D 3-6
 3AE-1-2.1 A 3-6
 3AE-1-2.2 D 3-6
 3AE-1-3.1 B 3-9
 3AE-1-3.2 D 3-9
 3AE-1-4.1 B 3-9
 3AE-1-4.2 C 3-9
 3AE-2.1 D 3-8
 3AE-2.2 A 3-8
 3AE-2.3 C 3-8
 3AE-2.4 D 3-10
 3AE-2.5 B 3-8
 3AE-2.6 D 3-8
 3AE-2.7 D 3-8
 3AE-2.8 A 3-8
 3AE-2.9 A 3-8
 3AE-3-1.1 C 3-15
 3AE-3-2.1 C 3-16
 3AE-3-2.2 C 3-16
 3AE-3-2.3 B 3-16
 3AE-3-2.4 C 3-16
 3AE-3-3.1 B 3-16
 3AE-3-3.2 C 3-16
 3AE-3-4.1 A 3-16
 3AE-3-4.2 B 3-16
 3AE-4-1.1 A 3-16
 3AE-4-2.1 A 3-16
 3AE-4-2.2 B 3-16
 3AE-4-2.3 A 3-16
 3AE-4-2.4 B 3-16
 3AE-4-3.1 C 3-17
 3AE-4-3.2 B 3-17
 3AE-4-4.1 A 3-17
 3AE-4-4.2 A 3-17

SUBELEMENT 3AF

3AF-1-1.1 B 4-7
 3AF-1-2.1 D 4-7
 3AF-1-2.2 C 4-9
 3AF-1-3.1 A 4-9
 3AF-1-3.2 B 4-9

3AF-1-3.3 B 4-10
 3AF-1-3.4 C 4-9
 3AF-1-4.1 A 4-10
 3AF-1-4.2 C 4-10
 3AF-1-5.1 B 4-2
 3AF-1-5.2 C 4-2
 3AF-2-1.1 D 4-10
 3AF-2-1.2 A 4-10
 3AF-2-1.3 D 4-10
 3AF-2-1.4 C 4-11
 3AF-2-2.1 D 4-10
 3AF-2-2.2 C 4-10
 3AF-2-3.1 D 4-10
 3AF-2-3.2 B 4-10
 3AF-2-3.3 A 4-10
 3AF-2-3.4 B 4-10
 3AF-2-4.1 A 4-11
 3AF-2-4.2 B 4-11
 3AF-2-4.3 C 4-11
 3AF-3-1.1 D 4-12
 3AF-3-1.2 A 4-12
 3AF-3-1.3 C 4-14
 3AF-3-1.4 C 4-13
 3AF-3-2.1 B 4-12
 3AF-3-2.2 D 4-11
 3AF-3-2.3 A 4-12
 3AF-3-2.4 B 4-12
 3AF-3-3.1 A 4-12
 3AF-3-3.2 B 4-12
 3AF-3-3.3 D 4-12
 3AF-3-4.1 D 4-13
 3AF-3-4.2 A 4-14

SUBELEMENT 3AG

3AG-1-1.1 A 5-7
 3AG-1-1.2 D 5-7
 3AG-1-2.1 C 5-8
 3AG-1-2.2 B 5-7
 3AG-2-1.1 B 5-8
 3AG-2-2.1 A 5-8
 3AG-2-2.2 B 5-8
 3AG-3-1.1 A 5-8
 3AG-3-1.2 D 5-8
 3AG-3-2.1 A 5-8
 3AG-4-1.1 C 5-11
 3AG-4-1.2 D 5-9
 3AG-4-1.3 B 5-9
 3AG-4-1.4 B 5-12
 3AG-4-1.5 D 5-9
 3AG-4-2.1 D 5-12
 3AG-4-2.2 C 5-10

SUBELEMENT 3AH

3AH-1.1 A 5-9
 3AH-2-1.1 A 5-9
 3AH-2-1.2 B 9-46
 3AH-2-2.1 C 5-9

3AH-2-2.2 A 5-9
 3AH-2-3.1 B 9-21
 3AH-2-3.2 A 9-21
 3AH-2-4.1 B 9-41
 3AH-2-4.2 D 9-41
 3AH-2-5.1 A 9-41
 3AH-2-5.2 B 9-41
 3AH-2-5.3 C 9-41
 3AH-2-6.1 A 9-41
 3AH-2-6.2 B 9-41
 3AH-2-7.1 D 9-41
 3AH-2-7.2 B 9-41
 3AH-2-8.1 C 8-18
 3AH-2-8.2 D 9-41
 3AH-3.1 A 9-41
 3AH-3.2 B 9-41
 3AH-4.1 C 9-41
 3AH-5.1 D 5-10
 3AH-5.2 C 5-9
 3AH-6.1 D 9-47
 3AH-6.2 C 9-47
 3AH-7-1.1 D 9-47
 3AH-7-2.1 B 9-47
 3AH-7-2.2 C 9-47

SUBELEMENT 3AI

3AI-1-1.1 A 7-19
 3AI-1-1.2 D 7-19
 3AI-1-1.3 C 7-19
 3AI-1-1.4 A 7-24
 3AI-1-1.5 C 7-19
 3AI-1-1.6 B 7-19
 3AI-1-1.7 A 7-25
 3AI-1-2.1 B 7-27
 3AI-1-2.2 B 7-27
 3AI-1-2.3 D 7-27
 3AI-1-2.4 C 7-27
 3AI-1-3.1 A 7-28
 3AI-2-1.1 B 7-24
 3AI-2-1.2 C 7-27
 3AI-2-1.3 C 7-27
 3AI-2-2.1 D 7-25
 3AI-2-2.2 D 7-25
 3AI-2-2.3 C 7-24
 3AI-2-2.4 D 7-27
 3AI-2-2.5 D 7-27
 3AI-3-1.1 D 7-5
 3AI-3-1.2 A 7-5
 3AI-3-2.1 A 7-6
 3AI-3-2.2 B 7-6
 3AI-3-3.1 D 7-23
 3AI-3-3.2 C 7-23
 3AI-3-3.3 C 7-23
 3AI-4-1.1 D 7-5
 3AI-4-1.2 C 7-5
 3AI-4-2.1 B 7-5
 3AI-4-2.2 A 7-5
 3AI-4-3.1 A 7-5

3AI-4-3.2 B 7-5
3AI-5-1.1 C 7-24
3AI-5-1.2 A 7-24

3AI-5-2.1 C 7-24
3AI-5-2.2 B 7-24
3AI-5-3.1 B 7-24
3AI-5-3.2 A 7-24

3AI-5-3.3 B 7-24
3AI-6-1.1 D 7-10
3AI-6-2.1 C 7-21

To: Federal Communications Commission
Personal Radio Branch
2025 M Street, N.W., Room 5328
Washington, DC 20554
Attn: Tom Fitz-Gibbon, Attorney

From: Dave Morse WW7K
OOC, Los Angeles Section, ARRL
15713 Romar St.
Granada Hills, CA. 91343
818-893-2817

And: Christine F. McElwain, KC6BLL
10331 Lindley Ave. #141
Northridge, CA. 91326
818-368-2123

Date: August 25, 1991

Dear Tom,

Chris had attended the retesting session for California Amateur Radio School on August 24, 1991, listed at Mar Vista, California. Unfortunately, we found inconsistencies in this retest session.

Charles Pascal and Sandra Crane taught the refresher course tailored to the test to be administered. Sandra had all three novice and technician tests in front of her as Charles Pascal taught the refresher. Sandra would make sure that Charles covered all material to be tested. Charles said "Sandy, keep all three tests there and make notes on anything I miss". Sandy said that "we just got the test's last night. They just got reviewed" to the class.

During the review sessions Sandra referred to the tests, quoted the exact wording from various questions and answers, and pointed out key words for the class to remember. Sandra had all tests to be administered in her possession prior to the VE's arrival.

The VE's arrived empty handed, with no test material in thier possession. Sandra handed the VE's a sealed package, which she started to open, but, was instructed by VE Tom Fakehany to hand the sealed package to Bob Osborn to open.


On the Novice portion of the test a diagram was needed that was not supplied in the test administered. Tom asked "Sandy, where is the diagram?", she (referring to Chris) doesn't have a diagram to one of these questions", Sandy's response was "it's in the package I'll get it". Sandy did get the material and distributed it to all in test session. This is a very clear indication that

Please find enclosed notes taken by Chris McElwain during the course and examination. This letter was prepared by Dave Morse and Chris McElwain with all quotes taken from Chris's notes.

It was very obvious that Sandra and Charles had taught the course to any of the three tests that could be administered for both novice and technician, not to the entire question pool. Chris was in a position to see all three tests for novice and technician in front of Sandra during the course. Sandra and Charles both made references to the tests being in front of Sandra during the course review.

It is suggested that both W5YI and FCC check Chris's notes to see they do in fact match to the test's administered. This may also be the case with the last testing session already submitted. If there is reasonable doubt, and especially if both test sessions were tailored to a portion of the pool, then it is suggested that FCC and or VEC administrative action be taken. The three VE's involved were Tom Fakehany, N6FDR, Michael Bryant, N6UBW, and Robert G. Osborn Jr., N6MSO.

Sincerely,

Dave Morse

Chris McElwain

CC: ARRL, Newington, CT.

Tom -
It was Sandy who checked my ID
(one photo I requested - used Drivers License)
She briefly looked at it and announced
"Yep. She's who she said she is"
When Mike Bryant asked Sandy where
Tom was, she said "I don't know"
Someone else, I don't know who, said
"I think he's upstairs." I looked at my
watch. It was 4:00 & I was just starting my tech
It was 10 minutes before he came back.

W5YI-VEC

National Volunteer Examiner Coordinator

This certifies that:

DATE OF ISSUE: 08/24/91

CITY/STATE (Session Site)

Mar Vista, CA

NAME CHRISTINE F McELWAIN

STATION CALL SIGN

10331 Lindley #141

NUMBER AND STREET

North Ridge

CA

STATE

91326

ZIP

has SUCCESSFULLY PASSED the following elements:

☐ 1(A) 5 wpm ☐ 1(B) 13 wpm ☐ 1(C) 20 wpm ☒ 2 ☒ 3(A) ☐ 3(B) ☐ 4(A) ☐ 4(B)

and will be given credit for this examination element when the appropriate additional examination element is (re)taken at a subsequent examination session within one year of the date of issue of this certificate.

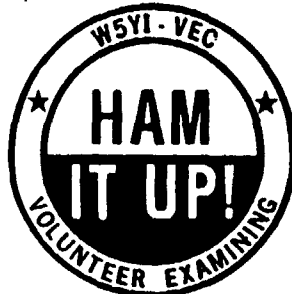
has SUCCESSFULLY PASSED all elements for the following operator license class:

☐ Novice, ☒ Technician, ☐ General, ☐ Advanced, ☐ Amateur Extra.

If you already have an FCC-issued amateur radio license, this certificate validates temporary (interim) operation with the rights and privileges of your new operator class (see Section 97.35 of the Commission's Rules) until you receive the license for your new operator class, or for a period of one year of the date of issue of this certificate, whichever comes first.

When operating on an interim basis in the telegraphy mode, you must append your call sign with /KT (Technician), /AG (General), /AA (Advanced) or /AE (Extra Class.) Use the word "Temporary" before the identifier (KT, AG, AA or AE) when operating in the voice mode.

THIS CERTIFICATE IS NOT A LICENSE PERMIT OR ANY OTHER KIND OF OPERATING AUTHORITY



VOLUNTEER EXAMINERS

	SIGNATURE	VE-#	STATION CALL SIGN
(1.)	Michael Boye	7059	N6UBW
(2.)	Tom E. Zaharany	5652	N6FDR
(3.)	Robert G. Osborn Jr	9593A	N6H50

W5YI-VEC; NATIONAL VOLUNTEER EXAMINER COORDINATOR

FREDERICK O. MAIA, W5YI

P.O. Box 565101; Dallas, Texas; 75356 - Tel: (817) 461-6443

SIGNATURE OF APPLICANT

PARTIAL TRANSCRIPT OF TAPE RECORDING
MADE AT SEPTEMBER 14, 1991, EXAMINATION
SESSION

Michael
Bryant

Now, for your Novice test, the only thing that you'll hear is the word "Novice" in CW and six V's and it goes right into the test.

Charles P.
Pascal

I don't think it has six V's.

Michael
Bryant

Yes, six V's.

Charles P.
Pascal

No, it doesn't

Michael
Bryant

O.K., you said Novice tape...There is the word Novice and the code and then you go to six V's...

Sandra V.
Crane

...There's no V's... Just go Novice, then it starts...

FEDERAL COMMUNICATIONS COMMISSION
P.O. Box 1020
GETTYSBURG, PA 17326

Approved OMB
3060-0003
Expires 12/31/89

APPLICATION FOR AMATEUR RADIO STATION AND/OR OPERATOR LICENSE

NO FCC FILING FEE REQUIRED (see instruction H)

ADMINISTERING VES' REPORT		EXAMINATION ELEMENTS							
Applicant is credited for: <input checked="" type="checkbox"/>		1(A)	1(B)	1(C)	2	3(A)	3(B)	4(A)	4(B)
A. FCC Amateur license held (97.25(a)):	Class <input checked="" type="checkbox"/>	(NT)	(GA)		(NTGA)	(TGA)	(GA)	(A)	
B. CERTIFICATE(S) OF SUCCESSFUL COMPLETION OF AN EXAMINATION HELD (97.25(b)):	<input checked="" type="checkbox"/>	Date issued	Date issued	Date issued	Date issued	Date issued	Date issued	Date issued	Date issued
C. FCC Commercial Radiotelegraph Operator License held (97.25(c)):	Number: <input checked="" type="checkbox"/>			Exp Date					
D. Examination elements passed that were administered at this session:	<input checked="" type="checkbox"/>	X							
E. APPLICANT is qualified for operator license class: <input type="checkbox"/> None:		H. Date of VEC coordinated examination session:							
E1. <input type="checkbox"/> NOVICE (Elements 1(A), 1(B), or 1(C) and 2)		09/14/91							
E2. <input checked="" type="checkbox"/> TECHNICIAN + (Elements 1(A), 1(B), or 1(C), 2 and 3(A))		I. VEC Receipt Date:							
<input type="checkbox"/> GENERAL (Elements 1(B) or 1(C), 2, 3(A), and 3(B))									
<input type="checkbox"/> ADVANCED (Elements 1(B) or 1(C), 2, 3(A), 3(B) and 4(A))									
<input type="checkbox"/> AMATEUR EXTRA (Elements 1(C), 2, 3(A), 3(B), 4(A), and 4(B))									
F. Name of Volunteer-Examiner Coordinator: (VEC coordinated sessions only)		W5 YI							
G. Examination session location: (VEC coordinated sessions only)		MARINA DEL REY, CA							

SECTION I

1. IF YOU HOLD A VALID LICENSE ATTACH THE ORIGINAL LICENSE OR PHOTOCOPY ON BACK OF APPLICATION. IF THE VALID LICENSE OR CERTIFICATE OF SUCCESSFUL COMPLETION OF AN EXAMINATION WAS LOST OR DESTROYED, PLEASE EXPLAIN.			
2. CHECK ONE OR MORE ITEMS, NORMALLY ALL LICENSES ARE ISSUED FOR A 10 YEAR TERM.			
2A. <input type="checkbox"/> RENEW LICENSE—NO OTHER CHANGES <input checked="" type="checkbox"/>	EXPIRATION DATE (Month, Day, Year)		
2B. <input type="checkbox"/> REINSTATE LICENSE EXPIRED LESS THAN 2 YEARS <input checked="" type="checkbox"/>			
2C. <input type="checkbox"/> EXAMINATION FOR NEW LICENSE	FORMER LAST NAME SUFFIX (Jr., Sr., etc.)		
2D. <input checked="" type="checkbox"/> EXAMINATION TO UPGRADE OPERATOR CLASS			
2E. <input type="checkbox"/> CHANGE CALL SIGN (Be sure you are eligible—See Inst. 2E)	FORMER FIRST NAME MIDDLE INITIAL		
2F. <input type="checkbox"/> CHANGE NAME (Give former name) <input checked="" type="checkbox"/>			
2G. <input type="checkbox"/> CHANGE MAILING ADDRESS			
2H. <input type="checkbox"/> CHANGE STATION LOCATION			
3. CALL SIGN (If you checked 2C above, skip items 3 and 4)		4. OPERATOR CLASS OF THE ATTACHED LICENSE:	
5. CURRENT FIRST NAME	M.I.	LAST NAME	SUFFIX (Jr., Sr., etc.)
CHRISTINE	F	McELWAIN	
6. DATE OF BIRTH (Month, Day, Year)			
09/18/44			
7. CURRENT MAILING ADDRESS (Number and Street)	CITY	STATE	ZIP CODE
10331 LINDLEY AVE #141	NORTH RIDGE	CA	91326
8. CURRENT STATION LOCATION (Do not use a P.O. Box No., RFD No., or General Delivery. See Instruction 8)		CITY	STATE
SAME AS ABOVE			
9. Would a Commission grant of your application be an action which may have a significant environmental effect as defined by Section 1.1307 of the Commission's Rules? See instruction 9. If you answer yes, submit the statement as required by Sections 1.1308 and 1.1311. <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
10. Do you have any other amateur radio application on file with the Commission that has not been acted upon? If yes, answer items 11 and 12. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
11. PURPOSE OF OTHER APPLICATION		12. DATE SUBMITTED (Month, Day, Year)	
No code Tech.		8-24-91	

CERTIFICATION

I CERTIFY THAT all statements herein and attachments herewith are true, complete, and correct to the best of my knowledge and belief and are made in good faith; that I am not a representative of a foreign government; that I waive any claim to the use of any particular frequency regardless of prior use by license or otherwise; and that the station to be licensed will be inaccessible to unauthorized persons.

WILLFUL FALSE STATEMENTS MADE ON THIS FORM OR ATTACHMENTS ARE PUNISHABLE BY FINE AND IMPRISONMENT
U.S. CODE TITLE 18, SECTION 1001

13. SIGNATURE OF APPLICANT: (Must match item 5)	14. DATE SIGNED:
Christine J. McElwain	9/18/91

ATTACH THE ORIGINAL LICENSE OR PHOTOCOPY HERE

SECTION II - EXAMINATION INFORMATION

SECTION II-A FOR NOVICE OPERATOR EXAMINATION ONLY. To be completed by the Administering VEs after completing the Administering VE's Report on the other side of this form.

CERTIFICATION

I CERTIFY THAT I have complied with the Administering VE requirements stated in Part 97 of the Commission's Rules; THAT I have administered to the applicant and graded an amateur radio operator examination in accordance with Part 97 of the Commission's Rules; THAT I have indicated in the Administering VE's Report the examination element(s) the applicant passed; THAT I have examined documents held by the applicant and I have indicated in the Administering VE's Report the examination element for which the applicant is given examination credit in accordance with Part 97 of the Commission's Rules.

1A. VOLUNTEER EXAMINER'S NAME: (First, MI, Last, Suffix) (Print or Type)

1B. VE'S MAILING ADDRESS: (Number, Street, City, State, ZIP Code)

1C. VE'S OPERATOR CLASS:

☐ GENERAL

☐ ADVANCED

☐ AMATEUR EXTRA

1D. VE'S STATION CALL SIGN

1E. LICENSE EXPIRATION DATE:

1F. IF YOU HAVE AN APPLICATION PENDING FOR YOUR LICENSE, GIVE FILING DATE:

1G. SIGNATURE: (Must match Item 1A)

DATE SIGNED

2A. VOLUNTEER EXAMINER'S NAME: (First, MI, Last, Suffix) (Print or Type)

2B. VE'S MAILING ADDRESS: (Number, Street, City, State, ZIP Code)

2C. VE'S OPERATOR CLASS:

☐ GENERAL

☐ ADVANCED

☐ AMATEUR EXTRA

2D. VE'S STATION CALL SIGN

2E. LICENSE EXPIRATION DATE:

2F. IF YOU HAVE AN APPLICATION PENDING FOR YOUR LICENSE, GIVE FILING DATE:

2G. SIGNATURE: (Must match Item 2A)

DATE SIGNED

SECTION II-B FOR TECHNICIAN, GENERAL, ADVANCED, OR AMATEUR EXTRA OPERATOR EXAMINATION ONLY. To be completed by the Administering VEs after completing the Administering VE's Report on the other side of this form.

CERTIFICATION

I CERTIFY THAT I have complied with the Administering VE requirements stated in Part 97 of the Commission's Rules; THAT I have administered to the applicant and graded an amateur radio operator examination in accordance with Part 97 of the Commission's Rules; THAT I have indicated in the Administering VE's Report the examination element(s) the applicant passed; THAT I have examined documents held by the applicant and I have indicated in the Administering VE's Report the examination element(s) for which the applicant is given examination credit in accordance with Part 97 of the Commission's Rules.

1A. VOLUNTEER EXAMINER'S NAME: (First, MI, Last, Suffix) (Print or Type)

1B. VE'S STATION CALL SIGN:

1C. SIGNATURE: (Must match Item 1A)

DATE SIGNED:

2A. VOLUNTEER EXAMINER'S NAME: (First, MI, Last, Suffix) (Print or Type)

2B. VE'S STATION CALL SIGN:

2C. SIGNATURE: (Must match Item 2A)

DATE SIGNED:

3A. VOLUNTEER EXAMINER'S NAME: (First, MI, Last, Suffix) (Print or Type)

3B. VE'S STATION CALL SIGN:

3C. SIGNATURE: (Must match Item 3A)

DATE SIGNED:

(Print) NAME: CHRISTINE McELWAIN

Element: 1A Date: 9/14/91 Signature: Christine I McElwain

NOVICE

5019283746 IS OT TNA KR 6

W F YLCP .

OR X THE NAME IS TOM [AND I AM
IN TENNESSEE, THE TRAIN IS N
OT AT THE STATION.]

Attachment + 15

To: Federal Communications Commission
Personal Radio Branch
2025 M Street, N.W., Room 5328
Washington, DC 20554
Attn: Tom Fitz-Gibbon, Attorney

From: Dave Morse WW7K
OOC, Los Angeles Section, ARRL
15713 Romar St.
Granada Hills, CA. 91343
818-893-2817

And: Christine F. McElwain, KC6BLL
10331 Lindley Ave. #141
Northridge, CA. 91326
818-368-2123

Date: September 29, 1991

Dear Tom,

As per the tape enclosed you will find the following. Sandra Crane was acting as a member of the VE team administering the exams. This is clearly a conflict of interest in that the two owners of the school made and supplied the code tests and administered the written and code exams.

Sandra: The VE's are not paid but we comp. them to lunch or dinner.

Charlie talking to Mike Bryant: You or Ray or SANDY can interpret questions during the test.

This clearly shows that Sandra had planned to stay in the testing session and act as an examiner. Sandra did stay in the session most of the time. There were times where no Ve was present during testing. Jim Mc Kinley was rarely in the room during any testing session. The Ve's frequently deferred to Sandra and Charlie for instructions on using and locating test materials. It is obvious the Ve's had no control over the material to be administered, written and code.

On the tape you will find Sandra giving instructions on the code and written tests. This clearly shows she is acting as an examiner.

Dialogue between Mike, Charlie and Sandy indicates Charlie and Sandy knew the content of the test tape and the VE's did not

1
The ve (Mike) was looking at a test copy and insisted that the tape started with 6V's and Charlie and Sandra are adamant that the test starts with the word novice and there are no 6 V's. A copy of the code test shows there are no series of v's at the start.

Mike Bryant asks Charlie for the code test tape. Charlie replies that Sandy has the tape and calls out to Sandy to get the tape.

The following is a transcription of the code. Please notice that the random letters at the beginning are not random. They appear to follow a widely accepted format of teaching the code, such as sending all dits first, then the dahs, followed by letter patterns consisting of dits and dahs. Even the numerals follow the standard teaching patterns.

NOVICE 5 0 1 9 2 8 3 7 4 6

H	S	I	E	O	M	T	N	A	D	U	K	R
....	---	--	-	-.	.--	.-	.-.

G W B V F L Y Q C J P X Z . / BK SK AR BT

THE NAME IS DON AND I AM IN TENNESSEE.
THE TRAIN IS NOT AT THE STATION.

The examining Ve team consisted of: Michael Bryant, N6UBW, Raymond A. Navarro, N6RXX, James E. Mc Kinley, N6RPC. A Danny ? acted as a Ve in that he corrected the written tests with Ray Navarro.


Dave Morse
OOC, Los Angeles Section

Chris McElwain

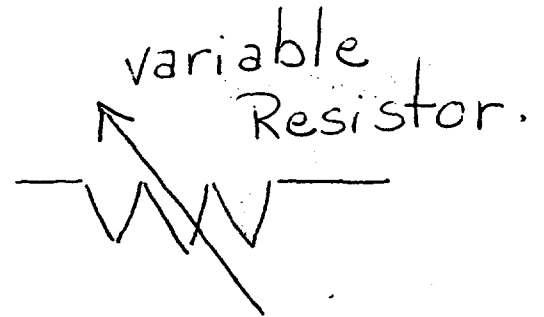
CALIFORNIA AMATEUR RADIO SCHOOL

213-301-1597

MARINA del REY, CALIFORNIA 90292

SCHEMATICS NOVICE/TECH

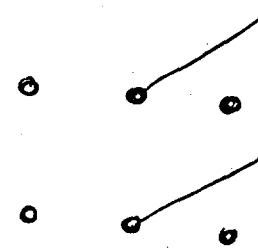
RESISTOR



EARTHGROUND



ANTENNA

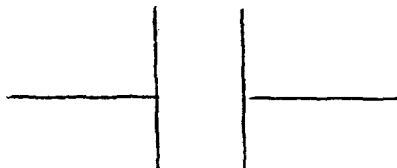


double pole
double throw.

IRON CORE INDUCTOR



CAPACITOR



only diagram
... needed to!

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)	
)	
Revocation of License of)	
)	PR Docket No. 92-119
SANDRA V. CRANE)	
Amateur Radio Station)	
N6TFO)	
)	
and)	
)	
Suspension of License of)	
)	
SANDRA V. CRANE)	
Amateur Extra Class)	
Radio Operator License)	
)	
and)	
)	
Revocation of License of)	
)	
CHARLES P. PASCAL)	
Amateur Radio Station)	
WB6CIY)	
)	
and)	
)	
Suspension of License of)	
)	
CHARLES P. PASCAL)	
Amateur Extra Class)	
Radio Operator License)	

AFFIDAVIT OF FRED MAIA

I, Fred Maia, being first duly sworn, depose and state as follows:

1. I am the president of the W5YI Group. As president, I supervise the activities of the W5YI-VEC (Volunteer Examiner Coordinator) organization, which is a component of the W5YI Group. I have been president of the W5YI Group since ¹⁹⁸⁰~~1984~~. My duties in connection with the W5YI-VEC include: recruiting and accrediting volunteer examiners (VEs); coordinating examination

F. Maia

sessions with VEs; providing amateur radio license testing material and the associated forms; screening, approving and forwarding successful applications; collecting and archiving examination session records; and supervising personnel who assist me in carrying out these duties. I am very familiar with the kinds of documents that are submitted to the W5YI-VEC.

2. I hold the license for amateur station W5YI and an Amateur Extra Class operator license. I have been an amateur since approximately 1955 and have held an Amateur Extra Class operator license for approximately 15 years. I am a high school graduate with some college education. In the military, I was a radio operator who received training at an Air Force radio school.

3. Attachments 1 through 3 are true and correct copies of examinations produced by the W5YI-VEC. I can recognize them as such because of the following distinct characteristics: the W5YI Volunteer Examiner Coordinator designation, the use of the series designations H901 and J901, the distinctive printing format and the distinctive diagrams prepared through the use of software that is not widely available to others. These examinations were distributed to VE team leaders.

4. Attachment 4 is a copy of the VEs' report of the examination session held on August 4, 1991, at the home of Sandra V. Crane. Attachments 5 through 16 are copies of the applications and examination papers¹ of the twelve

¹ These include only papers with passing grades. Papers without passing grades are not forwarded to the VEC.

applicants examined at that session. Attachments 4 through 16 are true and correct copies of documents sent by the VEs to the W5YI-VEC which I personally processed.

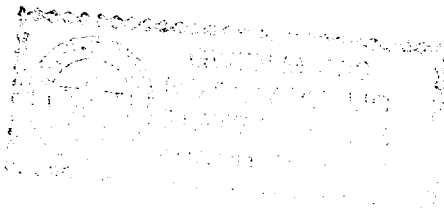
5. Attachment 17 is a copy of the VEs' report of the examination session held on August 24, 1991, at the home of Sandra V. Crane. Attachments 18 through 25 are copies of the applications and examination papers¹ of the eight applicants examined at that session. Attachments 17 through 25 are true and correct copies of documents sent to the W5YI-VEC which I personally processed.

6. Attachment 26 is a copy of the VEs' report of the examination session held on September 14, 1991, in Marina Del Rey, California. Attachments 27 through ~~43~~⁴⁵ are copies of the applications and examination papers¹ of the seventeen applicants at that session whose examination papers indicated that they passed at least one examination element. Attachments 26 through 43 are true and correct copies of documents sent to the W5YI-VEC which I personally processed.

Fred Maia
Fred Maia

Subscribed and sworn to before me this 27th day of August 1992.

Cowen Francis
Notary Public



W5YI Volunteer Examiner Coordinator
Element 2 - Novice Examination - Series H901

1. If you are operating your amateur station on 21150 kHz, in what meter band are you operating?
 - A. 80 meters
 - B. 40 meters
 - C. 15 meters
 - D. 10 meters
2. The amateur service rules were designed to provide a radio communications service that meets five fundamental purposes. What are those principles?
 - A. Recognition of business communications, advancement of the radio art, improvement of communication and business skills, increase in the number of trained radio operators and electronics experts, and the enhancement of international goodwill
 - B. Recognition of emergency communications, advancement of the radio art, improvement of communication and technical skills, increase in the number of trained radio operators and electronics experts, and the enhancement of international goodwill
 - C. Recognition of emergency communications, preservation of the earliest radio techniques, improvement of communication and technical skills, maintain a pool of people familiar with early tube-type equipment, and the enhancement of international goodwill
 - D. Recognition of emergency communications, advancement of the radio art, improvement of communication and technical skills, increase in the number of trained radio operators and electronics experts, and the enhancement of a sense of patriotism and nationalism
3. If you were to receive a voice distress signal from a station on a frequency outside your operator privileges, what restrictions would apply to assisting the station in distress?
 - A. You would not be allowed to assist the station because the frequency of its signals were outside your operator privileges
 - B. You would be allowed to assist the station only if your signals were restricted to the nearest frequency band of your privileges
 - C. You would be allowed to assist the station on a frequency outside of your operator privileges only if you used international Morse code
 - D. You would be allowed to assist the station on a frequency outside of your operator privileges using any means of radio communications at your disposal
4. What emission types are Novice control operators permitted to use from 3700 to 3750 kHz?
 - A. Phone only
 - B. CW and phone
 - C. All amateur emission privileges authorized for use on those frequencies
 - D. CW only
5. What emission types are Novice control operators permitted to use on the amateur 220-MHz band in ITU Region 2?
 - A. CW and phone only
 - B. CW and data only
 - C. Data and phone only
 - D. All amateur emission privileges authorized for use on 220 MHz
6. Another amateur gives you permission to use her amateur station. What are your responsibilities, as the control operator?
 - A. Both you and she are equally responsible for the proper operation of her station
 - B. Only the station licensee is responsible for the proper operation of the station, not you the control operator
 - C. You must be certain the station licensee has given proper FCC notice that you will be the control operator
 - D. You must inspect all antennas and related equipment to ensure they are working properly
7. When is an amateur operator permitted to transmit a message to a foreign country for a third party?
 - A. Anytime
 - B. Never
 - C. Anytime, unless there is a third-party traffic agreement between the US and the foreign government
 - D. When there is a third-party traffic agreement between the US and the foreign government, or when the third party is eligible to be the control operator of the station
8. What is the license class immediately above Novice class?
 - A. The Digital class license
 - B. The Technician class license
 - C. The General class license
 - D. The Experimenter's class license
9. Which one of the following call signs is a valid US amateur call?
 - A. CE2FTF
 - B. G3GVA
 - C. UA1ZAM
 - D. AA2Z

10. When are communications pertaining to business or commercial affairs of any party permitted in the amateur service?
 - A. Only when the immediate safety of human life or immediate protection of property is threatened
 - B. There are no rules against conducting business communications in the amateur service
 - C. No business communications of any kind are ever permitted in the amateur service
 - D. Business communications are permitted between the hours of 9 AM to 5 PM, only on weekdays
11. What is one meaning of the Q signal "QTH"?
 - A. Time here is
 - B. My name is
 - C. Stop sending
 - D. My location is ...
12. What is the meaning of the Morse code character AR?
 - A. Only the called station transmit
 - B. All received correctly
 - C. "Over" or End of transmission
 - D. Best regards
13. What type of propagation uses radio signals refracted back to earth by the ionosphere?
 - A. Sky wave
 - B. Earth-moon-earth
 - C. Ground wave
 - D. Tropospheric
14. Why should all antenna and rotator cables be grounded when an amateur station is not in use?
 - A. To lock the antenna system in one position
 - B. To avoid radio frequency interference
 - C. To save electricity
 - D. To protect the station and building from damage due to a nearby lightning strike
15. If you are notified that your amateur station is causing television interference, what should you do first?
 - A. Make sure that your amateur equipment is operating properly, and that it does not cause interference to your own television
 - B. Immediately turn off your transmitter and contact the nearest FCC office for assistance
 - C. Install a high-pass filter at the transmitter output and a low-pass filter at the antenna-input terminals of the TV
 - D. Continue operating normally, since you have no legal obligation to reduce or eliminate the interference
16. What precautions should you take before removing the shielding on a UHF power amplifier?
 - A. Make sure all RF screens are in place at the antenna
 - B. Make sure the feed line is properly grounded
 - C. Make sure the amplifier cannot be accidentally energized
 - D. Make sure that the RF leakage filters are connected
17. What instrument is used to indicate the relative impedance match between a transmitter and antenna?
 - A. An ammeter
 - B. An ohmmeter
 - C. A voltmeter
 - D. An SWR meter
18. List at least four good electrical insulators.
 - A. Glass, air, plastic, porcelain
 - B. Glass, wood, copper, porcelain
 - C. Paper, glass, air, aluminum
 - D. Plastic, rubber, wood, carbon
19. Signals above what frequency are usually called radio-frequency signals?
 - A. 20 Hz
 - B. 2000 Hz
 - C. 20,000 Hz
 - D. 1,000,000 Hz
20. Your receiver dial is calibrated in megahertz and shows a signal at 3.525 MHz. At what frequency would a dial calibrated in kilohertz show the signal?
 - A. 0.003525 kHz
 - B. 3525 kHz
 - C. 35.25 kHz
 - D. 3,525,000 kHz
21. What is the term used to describe a current that flows first in one direction, then in the opposite direction, over and over?
 - A. Alternating current
 - B. Direct current
 - C. Negative current
 - D. Positive current